

Amendments to the Claims

1. (Withdrawn) Textured yarns having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms.
2. (Withdrawn) Staple fibers having from 1 to 50 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms.
3. (Withdrawn) Single component and multicomponent yarns and staple fibers having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000 and having a cross-sectional shape selected from the group consisting of circular, elliptical, angular, hollow, multilobal, sheath core, or islands-in-the sea, and in the case of multicomponent fibers containing other melt processable polymers.
4. (Withdrawn) A yarn according to claim 3 having residual elongation of 1 to 50%, excellent filament uniformity, and low brittleness.

5. (Withdrawn) A high purity yarn and staple fiber according to claim 3 suitable for use in semiconductor, pharmaceutical, and other high purity applications.
6. (Withdrawn) A yarn according to claim 3 suitable for weaving, knitting, hydroentangling, flame treating, and other textile processes.
7. (Withdrawn) An air entangled yarn according to claim 3.
8. (Withdrawn) A twisted yarn, according to claim 3, having 1 to 20 twists per inch.
9. (Currently amended) A woven fabric having a weight per square yard of from about 1 to about 100 ounces per square yard made from flat, air entangled, or twisted yarns ~~according to claim 3~~, comprised of filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, suitable for use in filtration, and as a support scrim in nonwoven products.
10. (Currently amended) A knitted fabric having a weight per square yard of from about 1 to about 100 ounces per square yard made from flat, air entangled, or twisted yarns ~~according to claim 3~~ comprised of filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon

atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, suitable for use in filtration, and as a support scrim in nonwoven products.

11. (Withdrawn) A crimped staple fiber according to claim 3, wherein the filaments have been crimped to give an angular saw toothed shape having from 1 to 50 crimps per inch, cut to any length, suitable for use on standard carding equipment to make nonwoven batts which can then be needled into felts, for carding into sliver for making spun yarns, or for producing high loft air laid nonwoven products.
12. (Currently amended) A nonwoven perfluoropolymer fabric having a weight per square yard of from about 1 to about 100 ounces per square yard produced by needle punching of a continuous, carded staple fiber web, made from staple fibers comprised of filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total ~~yarn deniers~~ denier of about 10 to 100,000 and having a cross-sectional shape selected from the group consisting of circular, elliptical, angular, hollow, multilobal, sheath core, or islands-in-the sea, ~~and in the case of multicomponent fibers containing other melt processable polymers,~~ wherein the filaments have been crimped to give an angular saw toothed shape having from 1 to 50 crimps per inch, ~~cut to any length,~~ suitable for use on standard carding equipment to make nonwoven batts which can then be needled into felts, for carding into sliver for making spun yarns, or for producing high loft air laid nonwoven products, having excellent strength in both the machine and cross-machine directions, and good filtration properties.
13. (Currently amended) A lightly needled or un-needled carded batt made from melt processable perfluoropolymer fiber comprised of filaments having from 1 to 100

crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total denier of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxyvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, wherein the filaments have been crimped to give an angular saw toothed shape having from 1 to 50 crimps per inch according to claim 11, which has been densified and/or bonded through a heated calendering process, with smooth, textured, or patterned calender rolls, to yield a fabric with increased strength and stiffness as compared to its precursor.

14. (Original) A fabric, according to claim 12, further including a perfluoropolymer woven supporting fabric or scrim for increased strength.
15. (Original) A fabric, according to claim 12, further including a woven supporting fabric or scrim made from materials selected from the group consisting of glass, aramid, polyacrylate, polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other natural or synthetic fibers for increased strength.
16. (Currently amended) A fabric according to claim 12, 14 or 15 where the fabric density, air permeability, and mean pore size can be controlled through needling conditions by sequential needle punching at about 121 penetrations per square centimeter first at a penetration depth of about between about 5.9 millimeters and then at a penetration depth of about 7.4 millimeters and then at about 326 penetrations per square centimeter at a penetration depth of about 9.0 millimeters to produce mean pore size varyng between about 23.8 and about 40.0 microns.

17. (Currently amended) A calendered fabric according to claim 12, 14 or 15 where the fabric density, air permeability, and mean pore size can be controlled through the heated calendaring/densification process with smooth, textured, or patterned calender rolls to produce mean pore size varying between about 23.8 and about 40.0 microns and permeability varying between about 2.3 and about 33.8 cubic meters per square meter-minute in fabric varying between about 0.26 and about 3.01 millimeters in thickness.
18. (Currently amended) A fabric according to claim 12 ~~or 13~~, made from a blend comprising: from 1 to 99 percent melt processable perfluoropolymer staple fibers; and 99 to 1 percent fibers selected from the group consisting of glass, aramid, polyacrylate, polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other synthetic fibers, the fabric being made either with or without a woven support scrim made from either a perfluoropolymer or from materials selected from the group consisting of glass, aramid, polyacrylate polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other natural or synthetic fibers, the scrim being added for increased strength, and where the fabric density, air permeability and mean pore size ~~can be~~ are controlled through needling conditions by sequential needle punching at about 121 penetrations per square centimeter first at a penetration depth of about between about 5.9 millimeters and then at a penetration depth of about 7.4 millimeters and then at about 326 penetrations per square centimeter at a penetration depth of about 9.0 millimeters and through the heated calendaring/densification process with smooth, textured, or patterned calender rolls to produce mean pore size varying between about 23.8 an about 40.0 microns and

permeability varying between about 2.3 and about 33.8 cubic meters per square meter-minute in fabric varying between 0.26 and 3.01 millimeters in thickness.

19. (Currently amended) A fabric according to claim 12 ~~or 13~~ made from a blend comprising: 1 to 99 percent melt processable perfluoropolymer staple fibers; and 99 to 1 percent PTFE fibers, the fabric being made either with or without a woven support scrim made from either a perfluoropolymer or from materials selected from the group consisting of glass, aramid, polyacrylate polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other natural or synthetic fibers, the scrim being added for increased strength and where the fabric density, air permeability and mean pore size can be controlled through needling conditions by sequential needle punching at about 121 penetrations per square centimeter first at a penetration depth of about between about 5.9 millimeters and then at a penetration depth of about 7.4 millimeters and then at about 326 penetrations per square centimeter at a penetration depth of about 9.0 millimeters and then running the fabric through the a heated calendaring/densification process with smooth, textured, or patterned calender rolls.
20. (Currently amended) Flat, air entangled and twisted yarns, staple fibers, and woven, knit and nonwoven fabrics made with or without woven support scrims, derived from melt processable ~~perfluoropolymers~~ perfluoropolymer filament having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament denier from about 0.5 to about 300, and total denier of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at

least one perfluoroolefin having from 3 to 8 carbon atoms, which are thermally bonded to themselves.

21. (Currently amended) Flat, air entangled and twisted yarns, staple fibers, and woven, knit and nonwoven fabrics made with or without woven support scrims, derived from melt processable ~~perfluoropolymers~~ perfluoropolymer filament having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxyvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, thermally bonded to other high temperature plastics, fabrics and other media.
22. (Cancelled)
23. (Cancelled)
24. (Cancelled)
25. (Cancelled)
26. (Cancelled)
27. (Cancelled)
28. (Cancelled)
29. (Currently amended) A self-supported or scrim supported needlefelt derived from melt processable perfluoropolymer fibers ~~according to claim 11~~ comprising filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to

- 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, possessing a Mullen burst strength (ASTM-D3776) between 50 and 400 psi.
30. (Currently amended) A self-supported or scrim-supported needlefelt derived from melt processable perfluoropolymer fibers ~~according to claim 11~~ comprising filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament denier from about 0.5 to about 300, and total denier of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, possessing an air permeability between 1 and 300 cfm/ft² at 0.5" water pressure.
31. (Cancelled)
32. (Cancelled)
33. (Cancelled)
34. (Cancelled)
35. (Original) Flat, air entangled, and twisted yarns, staple fibers, and woven, knit, and nonwoven fabrics made with or without woven support scrims, derived from a blend comprising: 1 to 99 percent by melt processable perfluoropolymer fibers or yarns; and 99 to 1 percent of fibers or yarns made from materials selected from the group consisting of glass, aramid, polyacrylate, polyphenylene sulfide, polyimide, polyester, polyamide,

partially fluorinated polymers, carbon, or other natural or other synthetic fibers, which are thermally bonded to themselves.

36. (Original) Flat, air entangled, and twisted yarns, staple fibers, and woven, knit, and nonwoven fabrics made with or without woven support scrims, derived from a blend comprising: 1 to 99 percent by melt processable perfluoropolymer fibers or yarns; and 99 to 1 percent of fibers or yarns made from polytetrafluoroethylene (PTFE), which are thermally bonded to themselves.
37. (Original) Flat, air entangled, and twisted yarns, staple fibers, and woven, knit, and nonwoven fabrics made with or without woven support scrims, derived from a blend comprising: 1 to 99 percent by melt processable perfluoropolymer fibers or yarns; and 99 to 1 percent of fibers or yarns made from materials selected from the group consisting of glass, aramid, polyacrylate, polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other natural or other synthetic fibers, which are thermally bonded to other high temperature plastics, fabrics and other media.
38. (Original) Flat, air entangled, and twisted yarns, staple fibers, and woven, knit, and nonwoven fabrics made with or without woven support scrims, derived from a blend comprising: 1 to 99 percent by melt processable perfluoropolymer fibers or yarns; and 99 to 1 percent of fibers or yarns made from polytetrafluoroethylene (PTFE), which are thermally bonded to other high temperature plastics, fabrics and other media.
39. (Cancelled)
40. (Cancelled)
41. (Cancelled)
42. (Cancelled)

- 43. (Cancelled)
- 44. (Cancelled)
- 45. (Cancelled)
- 46. (Cancelled)
- 47. (Cancelled)
- 48. (Currently amended) A self-supported or scrim supported needlefelt made from a blend ~~comprising~~ including from 1 to 99 percent melt processable perfluoropolymer fibers ~~according to claim 11~~; comprising filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament denier from about 0.5 to about 300, and total denier of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxylvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, and 99 to 1 percent fibers made from materials selected from the group consisting of glass, aramid, polyacrylate, polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other natural or other synthetic fibers, said needlefelt possessing a Mullen burst strength (ASTM-D3776) between 50 and 400 psi.
- 49. (Currently amended) A self-supported or scrim supported needlefelt made from a blend ~~comprising~~ having from 1 to 99 percent melt processable perfluoropolymer fibers ~~according to claim 11~~; comprising filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000, wherein said perfluoropolymer

is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxyvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, and from 99 to 1 percent PTFE fibers, said needlefelt possessing a Mullen burst strength (ASTM-D3776) between 50 and 400 psi.

50. (Currently amended) A self-supported or scrim supported needlefelt made from a blend ~~comprising~~ comprising filaments from 1 to 99 percent by weight of melt processable perfluoropolymer fibers ~~according to claim 11;~~ having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament denier from about 0.5 to about 300, and total denier of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxyvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, and 99 to 1 percent by weight fibers made from materials selected from the group consisting of glass, aramid, polyacrylate, polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other natural or other synthetic fibers, said self supported or scrim supported needlefelt possessing an air permeability between 1 and 300 cfm/ft² at 0.5" water pressure.
51. (Currently amended) A self-supported or scrim supported needlefelt made from a blend ~~comprising~~ having from 1 to 99 percent by weight of melt processable perfluoropolymer fibers ~~according to claim 11;~~ comprising filaments having from 1 to 100 crimps/inch

derived from melt processable perfluoropolymers, having individual filament deniers from about 0.5 to about 300, and total yarn deniers of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxyvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms, and 99 to 1 percent PTFE fibers, said self-supported or scrim supported needlefelt possessing an air permeability between 1 and 300 cfm/ft² at 0.5" water pressure.

52. (Withdrawn) Filtration and coalescing components containing melt processable perfluoropolymer fibers, either alone, blended with other fibers or mixed with other materials, with seams formed by sewing, use of an adhesive, or by mechanical fasteners.
53. (Withdrawn) Filtration and coalescing components containing melt processable perfluoropolymer fibers, either alone, blended with other fibers or mixed with other materials, which are attached to other components of the filter or the filter housing, using an adhesive, to form a liquid tight seal.
54. (Withdrawn) Filtration and coalescing components containing melt processable perfluoropolymer fibers, either alone, blended with other fibers or mixed with other materials, attached to other media, such as membranes, drainage layers, pleat supports and any other component of filter element devices using an adhesive, by sewing, or by mechanical fasteners.
55. (Previously Presented) Yarns or threads including meltable and fusible fluoropolymer fibers in sufficient quantity to allow number claim after each claim yarn or thread to fuse or adhere to itself and/or to other materials or substrates.

56. (Previously Presented) Yarns or threads according to claim 55 wherein said fluoropolymer fibers comprise perfluoropolymer fibers.
57. (Currently amended) Webs or fabrics including meltable and fusable fluoropolymer fibers consisting of filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament denier from about 0.5 to about 300, and total denier of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxyvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms in sufficient quantity to allow the web or fabric to fuse or adhere to itself and/or to other materials or substrates.
58. (Currently amended) A web or fabric according to claim 57 wherein said fluoropolymer fibers comprise perfluoropolymer ~~fibers~~ filaments having from 1 to 100 crimps/inch derived from melt processable perfluoropolymers, having individual filament denier from about 0.5 to about 300, and total denier of about 10 to 100,000, wherein said perfluoropolymer is selected from the group consisting of copolymers of tetrafluoroethylene with 1 to 5 mole % of at least one perfluoroalkoxyvinylether, where the alkyl group has from 1 to 4 carbon atoms, and copolymers of tetrafluoroethylene with 2 to 20 mole% of at least one perfluoroolefin having from 3 to 8 carbon atoms.
59. (Withdrawn) A multi-lobed fluoropolymer fiber.
60. (Withdrawn) A fiber according to claim 59 that is a perfluoropolymer.
61. (Withdrawn) A hollow fluoropolymer fiber.
62. (Withdrawn) A fiber according to claim 61 that is a perfluoropolymer.

- 63. (Withdrawn) A crimped melt processable fluoropolymer fiber.
- 64. (Withdrawn) A fiber according to claim 63 that is a perfluoropolymer.
- 65. (Withdrawn) Filtration and coalescing media containing fluoropolymer fibers which may be bonded to themselves or to other plastics, fabrics, or other media by their ability to melt and adhere.
- 66. (Withdrawn) Filtration and coalescing components according to claim 65 with seams formed by thermal fusion.
- 67. (Withdrawn) Filtration and coalescing components according to claim 65 which are melt fused to other components of the filter or the filter housing to form a liquid tight seal.
- 68. (Withdrawn) Pleatable filtration and coalescing components according to claim 65.
- 69. (Withdrawn) Filtration and coalescing components according to claim 65 thermally bonded to other media, such as membranes, drainage layers, pleat supports and any other component of filter elements or devices.
- 70. (Withdrawn) Filtration and coalescing components according to claim 65 where the fluoropolymer is a perfluoropolymer.
- 71. (Withdrawn) Filtration and coalescing media, made from a blend of fibers comprising 1 to 99 percent fluoropolymer yarns or fibers and 99 to 1 percent by weight of fibers or yarns made from materials selected from the group consisting of glass, aramid, polyacrylate, polyphenylene sulfide, polyimide, polyester, polyamide, partially fluorinated polymers, carbon, or other natural or other synthetic fibers, where the fluoropolymer yarns or fibers can melt and adhere to surrounding fibers or to other materials and substrates.

- 72. (Withdrawn) Filtration and coalescing media, made from a blend of fibers comprising from 1 to 99 percent melt processable fluoropolymer yarns or fibers and 99 to 1 percent PTFE yarns or fibers, where the fluoropolymer fibers can melt and adhere to surrounding fibers or to other materials and substrates.
- 73. (Withdrawn) Filtration and coalescing components according to claim 71 or 72 with seams formed by thermal fusion.
- 74. (Withdrawn) Filtration and coalescing components according to claim 71 or 72 which are melt fused to other components of the filter or the filter housing to form a liquid tight seal.
- 75. (Withdrawn) Pleatable filtration and coalescing components according to claim 71 or 72.
- 76. (Withdrawn) Filtration and coalescing components according to claim 71 or 72 thermally bonded to other media, such as membranes, drainage layers, pleat supports and any other component of filter elements or devices.
- 77. (Previously presented) Filtration and coalescing components according to claim 71 or 72 where the fluoropolymer is a perfluoropolymer.